AGENDA

- June 2020 Stationary Source Committee
  - Meeting Summary
  - Committee and Stakeholder Comments
- Upcoming Compliance Deadlines and Recommendations for:
  - High Altitude Furnaces
  - Weatherized Furnaces
  - Dual Fuel Systems
- Next Steps
JUNE 20, 2020 STATIONARY SOURCE COMMITTEE MEETING

SUMMARY

- Staff presented an overview of Rule 1111 implementation status
- Additional topics presented include:
  - Impacts of COVID-19 on development and production
  - Total condensing and non-condensing models available from all seven furnace manufacturers
  - Status of the CLEANair consumer furnace rebate program
  - Development progress of high altitude and weatherized furnaces
  - Assessment on all potential heating system configurations

SUMMARY OF COMMITTEE MEMBER COMMENTS

- Stationary Source Committee commented on
  - Dual fuel systems with noncompliant 40 ng/J NOx furnaces
    - Possibility of a third party study of dual fuel systems
    - Emission differences of with dual fuel systems with noncompliant 40 ng/J NOx furnace
    - Enforcement concerns surrounding dual fuel systems with noncompliant 40 ng/J NOx furnaces
    - Price difference between dual fuel systems with noncompliant 40 ng/J NOx furnaces
    - Mixed comments regarding support and not supporting use of noncompliant 40 ng/J NOx furnace in dual fuel systems
  - Support time extension for high altitude furnaces
  - Incentives for 14 ng/J NOx dual fuel systems
  - Potential sell-through provision on weatherized furnaces
  - Requested Staff to return to Stationary Source Committee in August to present results
JUNE 20, 2020 STATIONARY SOURCE COMMITTEE MEETING
SUMMARY OF STAKEHOLDER COMMENTS

- Stakeholders commented on
  - Manufacturers have not provided guidance for use of compliant 14 ng/J NOx furnaces at high altitudes
  - Extension of weatherized furnaces should be extended from April to September 30, 2021 to avoid conflicts with the start of cooling season
  - Dual fuel systems
    - Allowing dual fuel systems with noncompliant 40 ng/J NOx furnaces undercuts existing dual fuel systems with 14 ng/J NOx furnaces
    - Dual fuel systems with noncompliant 40 ng/J NOx furnaces as an alternative compliance option for Rule 1111 provides greater consumer choice and potentially more emission reductions than standalone 14 ng/J NOx furnace
    - Enforcement challenges of allowing dual fuel systems with noncompliant 40 ng/J NOx furnaces

COMPLIANCE DEADLINES

- Condensing and Non-Condensing Furnaces: October 1, 2019
- Weatherized Furnaces: October 1, 2020
- High Altitude Installations (≥4,200 feet): October 1, 2020
- Mobile Home Furnaces: October 1, 2021
WEATHERIZED FURNACES
SEPARATION OF EQUIPMENT CATEGORY

- Mitigation fee period for weatherized furnaces ends September 30, 2020
- For most manufacturers, development of commercial and residential weatherized furnaces are separate from one another
  - Rule 1111 does not differentiate between residential and commercial weatherized furnaces
- Staff has reached out to all furnace manufacturers and discussed potential options to bifurcate the weatherized furnace category
- Staff discussed two categories based on single and three phase weatherized furnaces
  - Some manufacturers supported this split based on single and three phase
  - Other manufacturers felt it was not representative of their manufacturing and distribution for residential versus commercial
- **Staff is recommending to not separate implementation of weatherized furnaces**

COMMERCIALIZATION STATUS OF WEATHERIZED FURNACES AND RECOMMENDATIONS

- Commercialization of weatherized furnaces as of June 2020:
  - **Weatherized Furnaces**
    - Expected to have market coverage by October deadline
      - 3 out of 7 Manufacturers
    - Expected to have market coverage after October deadline
      - 2 out of 7 Manufacturers
    - Development Suspended or Pending Update
      - 2 out of 7 Manufacturers

**Recommendation:**

- Extend mitigation fee period for weatherized furnaces to September 30, 2021
  - No sell through, extension of the mitigation fee allows manufacturers and distributors to sell 40 ng/J NOx units up to September 30, 2021
- Add consumer rebate of $500 per unit for compliant weatherized units that will expire on September 30, 2021
  - Encourages commercialization of 14 ng/J NOx furnaces
**HIGH ALTITUDE FURNACES**

**DEVELOPMENT STATUS AND RECOMMENDATION**

- **High altitude condensing and non-condensing furnaces**
  - Two manufacturers currently have units certified for installation above 7,000 feet
  - One manufacturer is on track to certifying units for installation of at least 7,000 feet by October 1, 2020

- **High altitude weatherized furnaces**
  - One manufacturer is on track to certifying weatherized furnaces for installations above 7,000 feet by October 1, 2020

**Recommendations:**

- Extend end date of high altitude exemption from October 1, 2020 to until September 30, 2021 for condensing and non-condensing furnaces
- Compliance date for weatherized furnaces is being extended to September 30, 2021
- Add consumer rebate of $500 per unit for any compliant units installed in high altitude areas (above 4,200 feet) that will expire on September 30, 2021

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**DUAL FUEL HEATING SYSTEMS OVERVIEW**

- Dual fuel heating system is a natural gas furnace paired with an electric heat pump
- Electric heat pump replaces air conditioning unit

- Gas-fired furnace is used as auxiliary heating when temperatures are very low
- Furnace operation is determined by an adjustable switchover temperature

Higher the switchover set temperature, more often furnace operates and more emissions
AVAILABLE OPTIONS FOR HOME HEATING SYSTEMS

- Heat Pump
  - All electric heat (No gas furnace)
  - Heat pump is the cleanest option

- Dual Fuel System
  - with a 14 ng/J Furnace
  - Staff supports a dual fuel system with a 14 ng/J furnace

- Dual Fuel System
  - with a 40 ng/J Furnace

- Standalone 14 ng/J Furnace
  - Rule 1111 establishes the NOx limit for furnaces

- Standalone 40 ng/J Furnace

Cleanest Option
- Staff supports a dual fuel system with a 14 ng/J furnace
- Heat pump is the cleanest option

Rule 1111
- Establishes the NOx limit for furnaces

ENFORCEMENT CONCERNS

Staff Concerns
- No assurance that 40 ng/J furnace is sold and installed with a heat pump
- Difficult for inspectors to know if a 40 ng/J furnace at a distributor is for a dual fuel or standalone installation
- If A/C replaces a heat pump, all heat is provided by 40 ng/J furnace
- Difficult to ensure end user does not bypass electric pump or change the temperature setting
- No mechanism to limit operation of 40 ug/J furnace
- Homeowners can one day choose to replace heat pump with A/C

Stakeholder Response
- Non-compliant furnaces can be labeled
- Increase recordkeeping, reporting, and tracking
- Lock down switchover temp at manufacturer level
- Manufacturers can program the system so end users cannot make changes (anti-override technology)
- Communicating dual fuel systems can be programmed to prevent homeowner from piecemealing

Regulatory Loophole
- For distribution of non-compliant 40 ug/J furnaces
- Rule 1111 does not apply to the end user
SUMMARY OF DISCUSSION ON DUAL FUEL SYSTEMS

- Staff recognizes that dual fuel systems have potential to generate lower NOx than a standalone 14 ng/J NOx furnace, if designed properly
  - Staff continues to work with stakeholders to explore potential options to eliminate enforcement concerns
  - Manufacturers have worked over the past decade to commercialize 14 ng/J NOx furnaces
  - Staff acknowledges that weatherized furnaces may not have the same enforcement challenges as split systems
- Staff has reached out to furnace OEMs for equipment costs relating to dual fuel split systems, standalone furnaces, and heat pump heating systems that are utilizing a compliant 14 ng/J NOx furnace and noncompliant 40 ng/J NOx furnace

### SUMMARY OF RECOMMENDATIONS

<table>
<thead>
<tr>
<th>Equipment Category</th>
<th>Implementation Date</th>
<th>Dual Fuel Split with 40 ng/J NOx Furnace</th>
<th>Rebate</th>
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</thead>
<tbody>
<tr>
<td>Condensing and Non-condensing Furnaces</td>
<td>October 1, 2019</td>
<td>No</td>
<td>$500 rebate for dual fuel with condensing or non-condensing 14 ng/J furnace</td>
</tr>
<tr>
<td>Weatherized Furnaces</td>
<td>Extend mitigation fee period from September 30, 2020 to September 30, 2021</td>
<td>• Yes, up to September 30, 2021</td>
<td>$500 rebate for weatherized 14 ng/J furnaces until October 1, 2021</td>
</tr>
<tr>
<td>High Altitude Furnaces</td>
<td>Extend compliance date from October 1, 2020 to September 30, 2021</td>
<td>Yes*</td>
<td>$500 rebate for installation of 14 ng/J furnaces above 4,200 feet until September 30, 2021</td>
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*Provided that furnace manufacturers implement measures to ensure proper operation.
NEXT STEPS

- Amendments to Rule 1111 are needed by the September Board meeting to address October 1, 2020 compliance date for high altitude and weatherized furnaces

- Staff is reaching out to all seven furnace manufacturers to:
  - Obtain additional cost information for:
    - 14 ng/J NOx Furnace Systems (Standalone and Dual Fuel)
    - 40 ng/J NOx Furnace Systems (Standalone and Dual Fuel)
    - Heat pump system
  - Discuss how manufacturers can ensure non-compliant 40 ng/J furnaces are not sold and operated as a standalone furnace

- Return to Stationary Source Committee in August to present findings

- Public Workshop scheduled for July 15, 2020 and Public Hearing in September 2020

CONTACTS

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